

Application No.: 10/527,247
Amendment Dated April 24, 2009
Reply to Office Action of January 26, 2009

MAT-8671US

Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1, 2, 3 and 5. These sheets replace the original sheets.

Remarks/Arguments:

Claims 1-35 are pending in the application. Claims 21-35 are withdrawn from consideration. Claims 1-20 are rejected.

On page 2, the Official Action objects to the drawings because they are not labeled with descriptive text. Applicant has therefore amended the figures to include descriptive text labels. Withdrawal of the objection is respectfully requested.

On page 3, the Official Action rejects claims 1, 3, 5 and 11 under 35 U.S.C. §103(a) as being unpatentable over Miki (U.S. Patent No. 5,181,246) in view of Shunichi (JP 10-327130). It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

Applicant's invention, as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

... wherein the transmission device is configured to transmit the data repeatedly without changing the transmission communication method during a time period in which a receiving device is configured to switch through a plurality of reception communication methods, each of the plurality of reception communication methods formed by combining one of a plurality of demodulation methods and one of the plurality of carrier frequencies.

Claim 1 relates to a transmitter and receiver that utilize various modulation/demodulation methods and carrier frequencies. Specifically, a transmitter transmits data utilizing the same transmission method (e.g. same modulation method and carrier frequency), while the receiving device switches through the plurality of corresponding reception methods (e.g. the demodulation methods and the carrier frequencies). Support for this feature can be at least found in Fig. 1 and pages 22-24 of the specification. No new matter has been added.

In Fig. 5, Miki suggests a ring modulator 8 and a ring demodulator 14. In Col. 6 lines 25-45, Miki suggests that the carrier in ring modulator 8 is the same as the carrier in ring demodulator 14 so that proper modulation/demodulation can occur (*"modulator carrier generator 18 selects a modulator carrier ... selected frequency is transmitted to the ring*

modulator 8 ... demodulated carrier generator 19 selects a demodulator carrier frequency ... selected frequency is transmitted to the ring demodulator 14. To implant accurate modulation/demodulation, it is necessary that the modulator carrier frequency and the demodulator carrier frequency are identical with each other"). Furthermore, in Col. 8 lines 46-60, Miki suggests that the modulator carrier frequency and demodulator carrier frequency are controlled to change at the same time so that they may be synchronized and that a third party can not demodulate the signal (*"especially when the specific modulator carrier frequency signal 23 the demodulator carrier frequency signal 24 are varied in accordance with the control signal ... at arbitrary intervals of time, a third person can not easily identify the modulator carrier frequency"*). Thus, Miki does not suggest keeping the carrier frequency of the transmitter constant while switching through a plurality of carrier frequencies in the receiver (the modulator and demodulator are both controlled to be synchronized with the same carrier frequency at all times).

In the abstract, Shunichi suggest periodically changing a modulation method in a transmitter. Specifically, the modulation method periodically switches between FM and MFM so that adjacent data sequences are differently modulated. Shunichi, however, does not suggest keeping the modulation method of the transmitter constant while switching through a plurality of demodulation methods in the receiver.

Applicant's claim 1 is different than the art of record, because the transmitter maintains a constant transmission method while the receiver switches through a plurality of reception methods (*"... wherein the transmission device is configured to transmit the data repeatedly without changing the transmission communication method during a time period in which a receiving device is configured to switch through a plurality of reception communication methods, each of the plurality of reception communication methods formed by combining one of a plurality of demodulation methods and one of the plurality of carrier frequencies"*).

Shown in Applicant's Fig. 1, transmission device 100 comprises a plurality of modulators 20-24 and a plurality of carrier frequencies 10-13. Similarly, reception device 101 comprises a plurality of demodulators 50 and a plurality of carrier frequencies 40-43. During operation, transmission device 100 selects a modulation method and a carrier frequency (e.g. modulation method 20 and carrier frequency 10). Transmission device 100 then transmits data repeatedly over a period of time. During data transmission, reception device 101 switches reception methods by switching between the plurality of demodulation methods in 50 and the plurality of

carrier frequencies 40-43. When the reception device 101 chooses the correct combination of demodulation method and carrier frequency, the data is correctly received. This feature is at least supported in Applicant's pages 23 and 24 of the specification (*"it can happen that reception device 101 is not able to receive parts of or whole of the data transmitted due to differences in transmission delays of propagation paths or in timing of switching a method. In such a case, reception device 101 receives data by switching method switchers 33 and 34 time wise, and transmission device 100 keeps transmitting the same data repeatedly without switching method switchers 30-32 at least while reception device 101 switches every transmission for reception. This mechanism allows reception device 101 to obtain chances for receiving data by the transmission method used by transmission device 100, so that the data can be positively transmitted and received."*). Thus, by transmitting the same data in the same transmission method over a period of time, the receiver is able to cycle through every possible reception method in order to find the correct reception method for receiving the data. Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Claim 11 has similar features to claim 1. Thus, claim 11 is also patentable over the art of record for at least the reasons set forth above.

On page 6, the Official Action rejects claims 2 and 12 under 35 U.S.C. §103(a) as being unpatentable over Miki in view of Shunichi and further in view of Granstrom (U.S. Publication No. 2005/0215206). Granstrom is directed to a transceiver that is able to switch between two modulation/demodulation methods (GMSK and APSK). Granstrom, however, does not suggest the feature of amended claim 1. Thus, the combination of Miki, Shunichi and Granstrom is deficient.

Claims 2, 4-10 and 12-20 include all of the features of the claims 1 and 11 from which they depend. Thus, these claims are also patentable over the art of record for the reasons set forth above.

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In view of the amendment and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



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Attachments: Figures 1, 2, 3 and 5 (4 sheets)

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